

In the Claims

- Sub
FI
E
1. (Cancelled) A thin film negative temperature coefficient thermistor having a physical size comprising a thin film resistive element of a deposited mixture of metal oxide film, the thin film resistive element having a negative temperature coefficient, and the mixture being selected to provide the physical size.
 2. (Cancelled) The thin film negative temperature coefficient thermistor of claim 1 wherein the mixture of metal oxide film comprises manganese oxide.
 3. (Cancelled) The thin film negative temperature coefficient thermistor of claim 1 wherein the mixture of metal oxide film comprises nickel oxide.
 4. (Cancelled) The thin film negative temperature coefficient thermistor of claim 1 wherein the mixture of metal oxide film further comprising:
a manganese oxide;
a nickel oxide.
 5. (Cancelled) A product line of negative temperature coefficient thermistors, comprising:
a first negative temperature thermistor product having a first physical size and having a first resistance defined by a first negative temperature coefficient of resistance versus temperature curve;
a second negative temperature thermistor product having a second physical size and having a second resistance defined by a second negative temperature coefficient of resistance versus temperature curve, the first physical size the same as the second physical size, the first curve different from the second curve; and
the first negative temperature coefficient thermistor product being manufactured using deposition of a first metal oxide mixture and the second negative temperature thermistor product being manufactured using deposition of a second metal oxide mixture.

6. (Cancelled) The product line of claim 5 wherein the first resistance at a first temperature is the same as the second resistance at the first temperature, the first curve and the second curve intersecting at the first temperature.

7. (Cancelled) The product line of claim 5 wherein the first negative temperature coefficient of resistance versus temperature curve and the second negative temperature coefficient of resistance versus temperature curve intersect on at least one temperature.

8. (Currently Amended) A method of manufacturing a thin film negative temperature coefficient thermistor comprising:

determining a standardized physical size for the thin film negative temperature coefficient thermistor;

selecting a negative temperature coefficient of resistance versus temperature curve;

selecting a mixture of metal film materials to provide the negative temperature coefficient of resistance versus temperature curve while maintaining ~~a desired~~ the standardized physical size for the thermistor; and

depositing the mixture of metal film materials on a substrate using a thin film process.

9. (Original) The method of claim 8 further comprising:

associating a negative temperature coefficient of resistance versus temperature curve with the thin film negative temperature coefficient thermistor.

10. (Previously Amended) The method of claim 8 wherein the mixture is a mixture of manganese oxide and nickel oxide.

11. (Original) The method of manufacturing a thin film negative temperature coefficient thermistor of claim 8 further comprising:

planarizing a substrate prior to the depositing step;

sputtering conductor terminals;

sputtering a passivation layer; and

heat treating.

12. (Original) The method of claim 11 wherein the step of planarizing is applying silicon nitride film.

13. (Original) The method of claim 11 wherein the step of sputtering a passivation layer is sputtering silicon nitride film.

14. (Cancelled) A method of manufacturing a plurality of negative temperature coefficient thermistors, comprising:

selecting a physical size for the plurality of negative temperature coefficient thermistors;

selecting a first negative temperature coefficient of resistance verses temperature curve

associated with a first type of negative temperature coefficient thermistor;

selecting a first mixture of metal film materials to provide the first negative temperature

coefficient of resistance versus temperature curve while maintaining the physical size;

depositing the first mixture of metal film materials on a first substrate;

selecting a second negative temperature coefficient of resistance versus temperature curve

associated with a second type of negative temperature coefficient thermistor;

selecting a second mixture of metal film materials to provide the second negative temperature

coefficient of resistance versus temperature curve while maintaining the physical size;

and

depositing the second mixture of metal film materials on the second substrate.

15. (Previously Added) The method of claim 8 wherein the step of depositing is sputter depositing.

16. (Currently Amended) A method of manufacturing a thin film negative temperature coefficient thermistor, comprising:

determining a standardized physical size for the thin film negative temperature coefficient thermistor;

21
selecting a mixture of metal film materials to provide desired negative temperature coefficient of resistance properties while maintaining a the standardized physical size and depositing the metal film materials on a substrate using a thin film process.

Sub 17. (New)

A method of manufacturing a thin film negative temperature coefficient thermistor of a standardized package size, comprising sputter depositing a mixture of metal film materials on a substrate, the mixture of metal film materials selected to provide for desired negative temperature coefficient of resistance properties while maintaining the standardized package size.

3